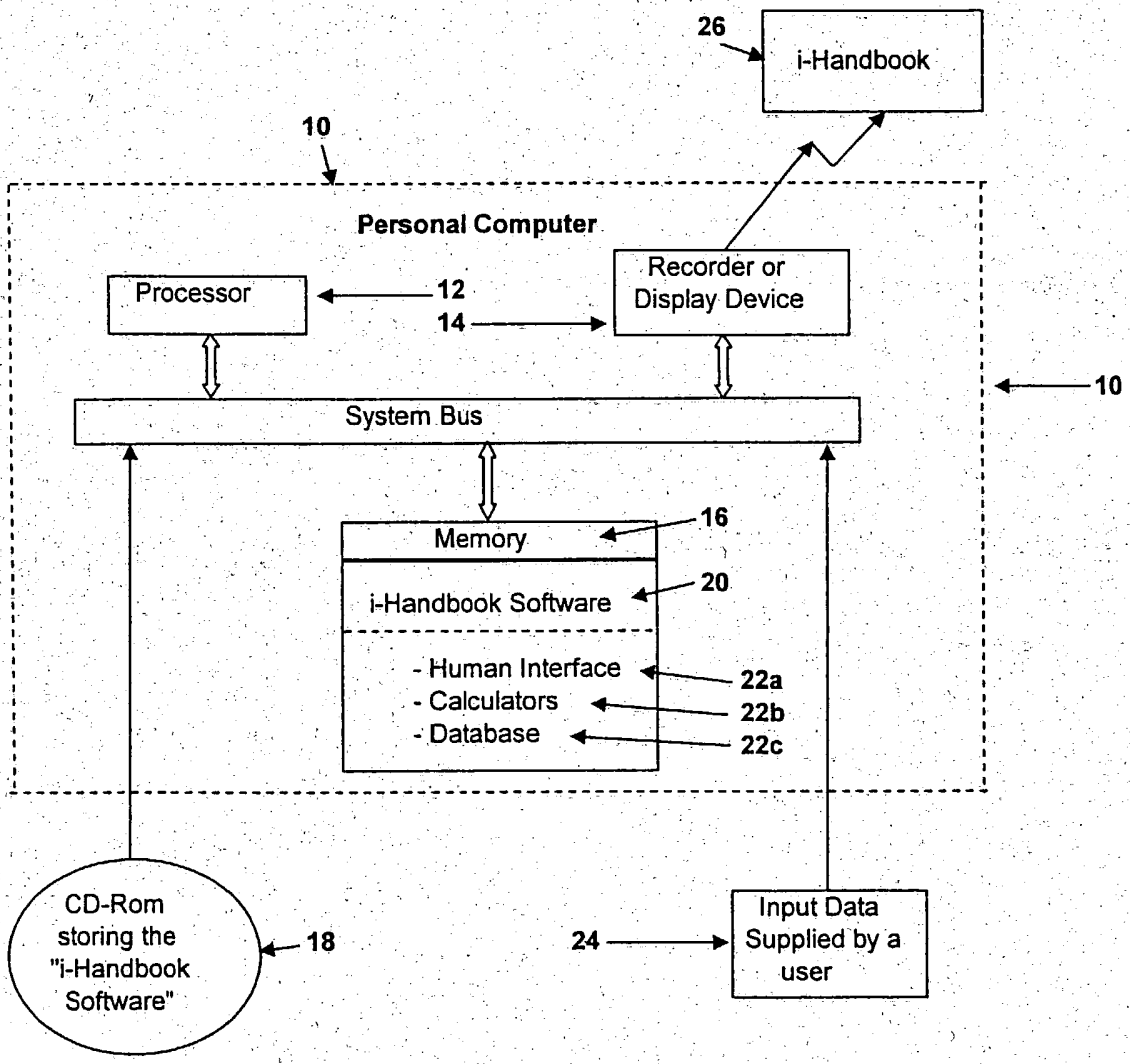
26
i-Handbook
10
Personal Computer
Processor
12
14
Recorder or
Display Device
10
System Bus
Memory
16
i-Handbook Software
20
- Human Interface
- Calculators
- Database
22a
22b
22c
CD-Rom
storing the
"i-Handbook
Software"
18
24
Input Data
Supplied by a
user

FIG 1

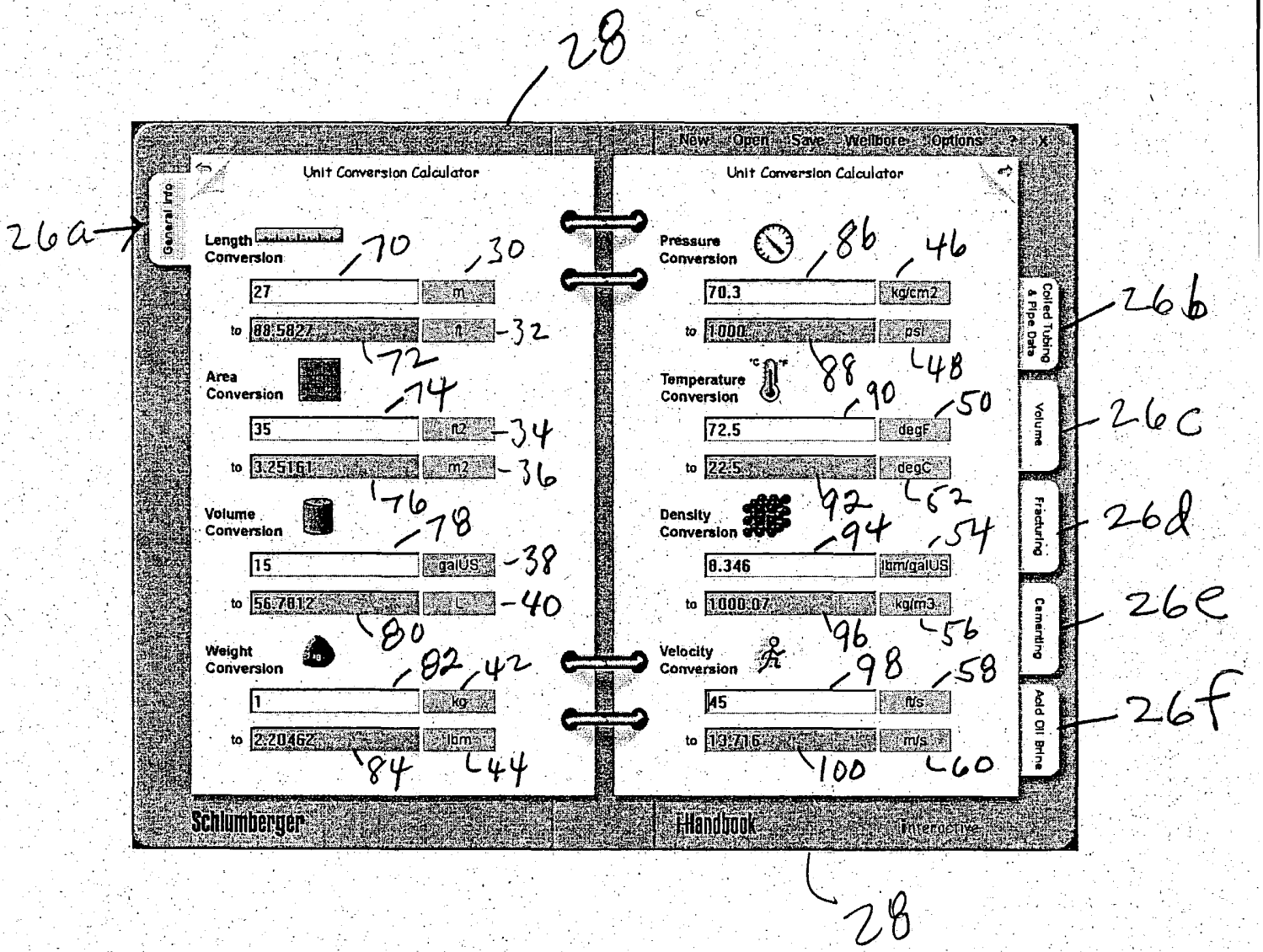

FIG 2 Results from Unit Conversion Calculator

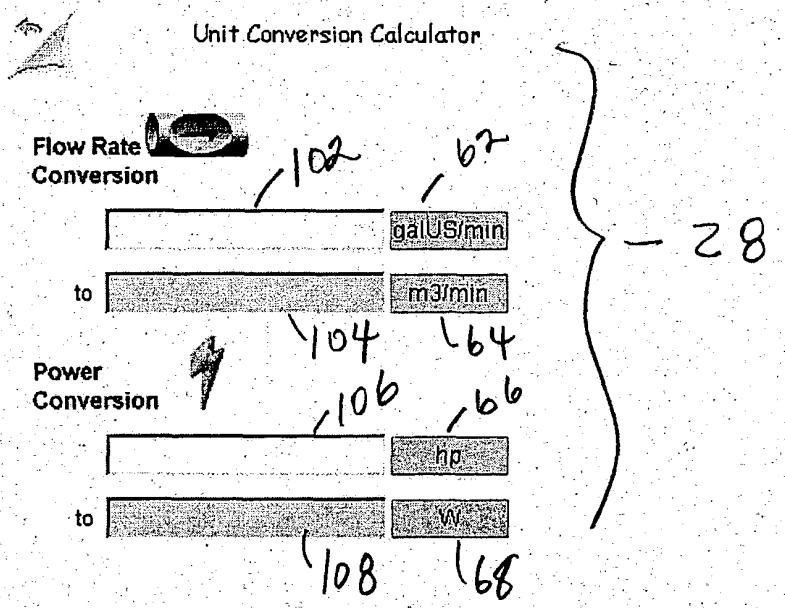
Unit Conversion Calculator
Flow Rate Conversion
102
62
galUS/min
to
m3/min
104
64
Power Conversion
106
66
hp
to
W
108
68
28

Fig 2A

meter	3.281	feet
meter	39.3701	inches
meter	1.094	yards

$$1\,\text{m} = 3.281\,\text{ft}$$

$$\therefore 27\,\text{m} = 27 \times 3.281\,\frac{\text{ft}}{\text{m}} = 88.5827\,\text{ft}$$

FIG 3 Conversion Factors

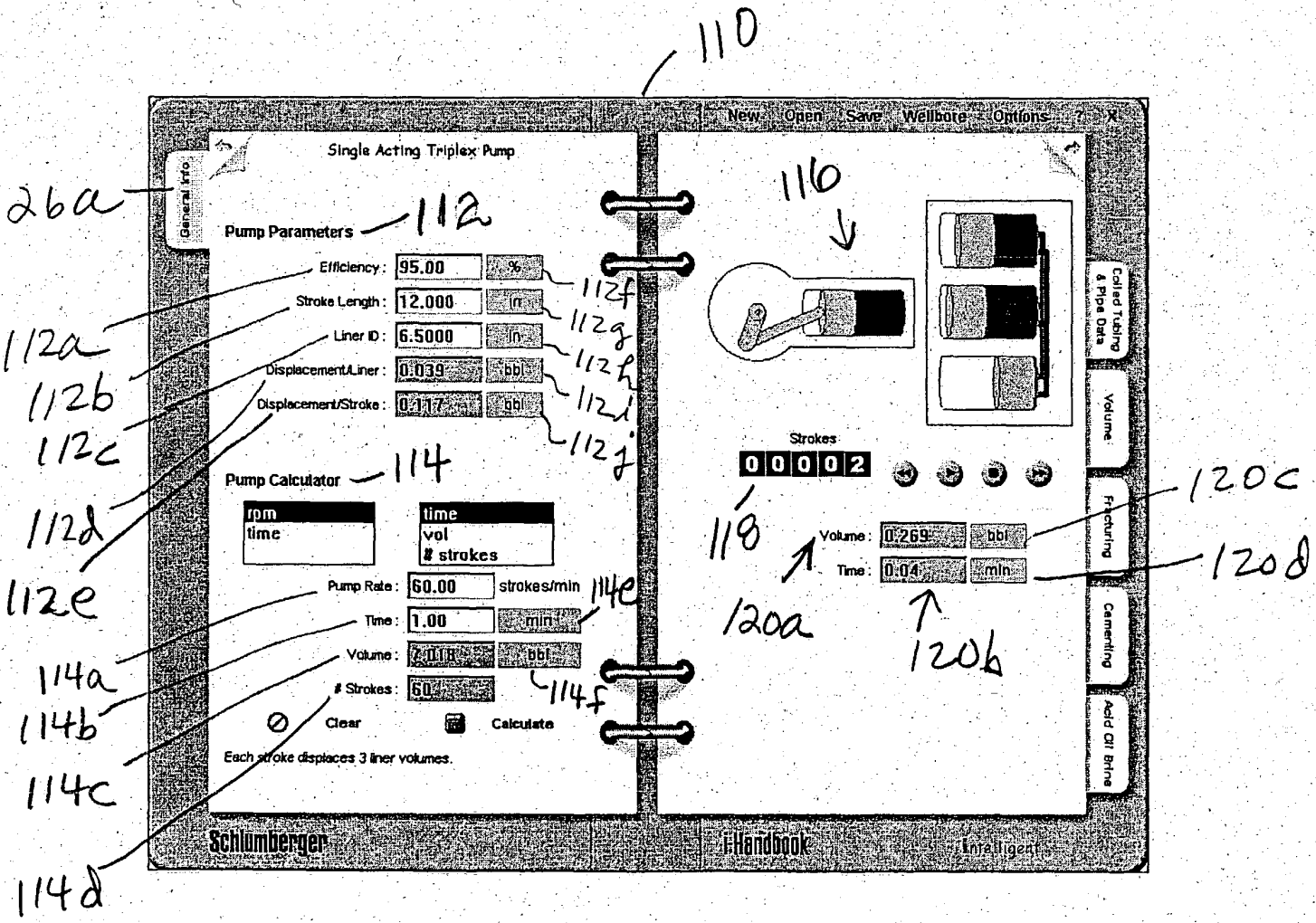

FIG 4 Computing volumes for Single Acting Triplex Pumps

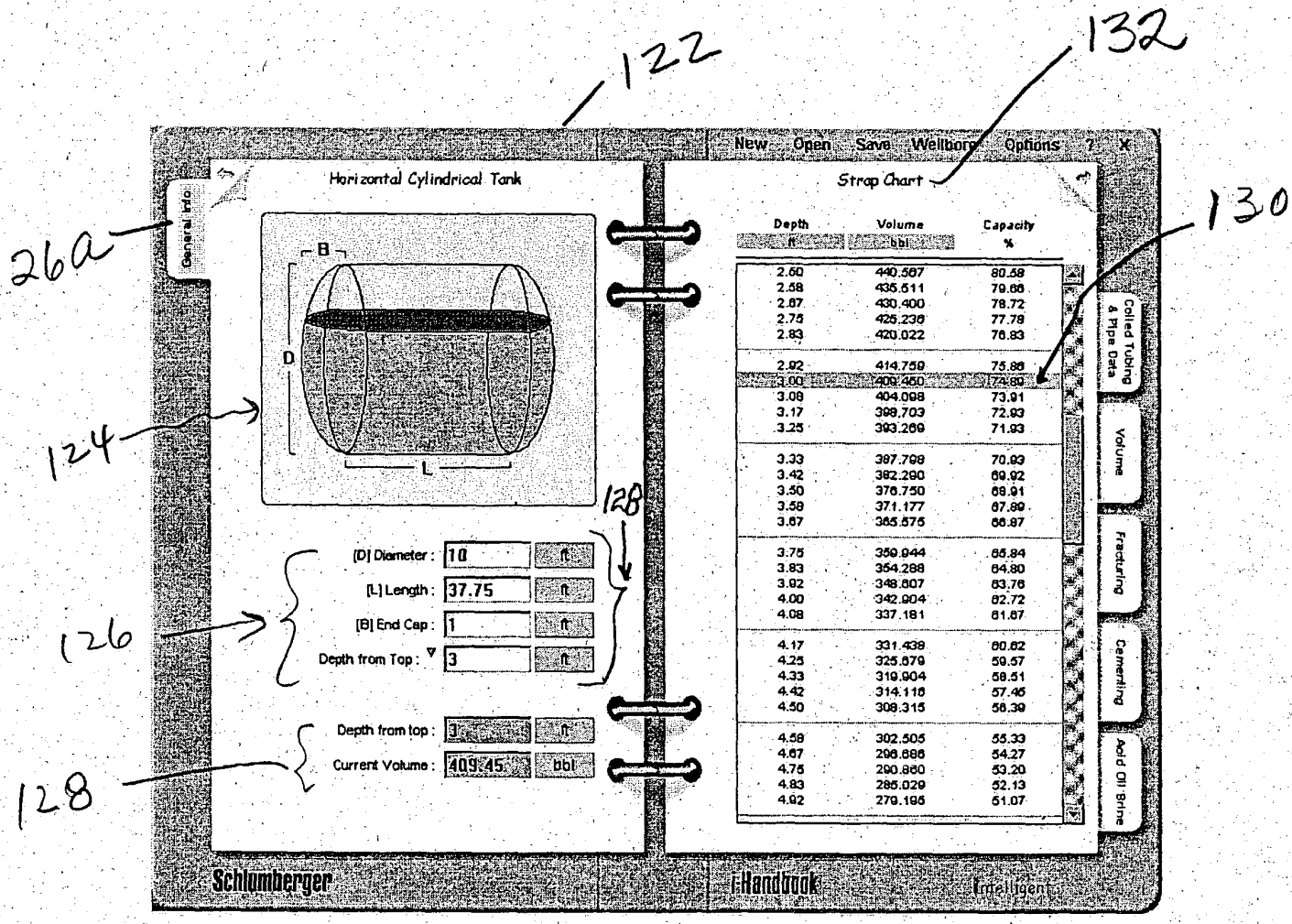

FIG 5 Computing Tank volumes and generating tank straps

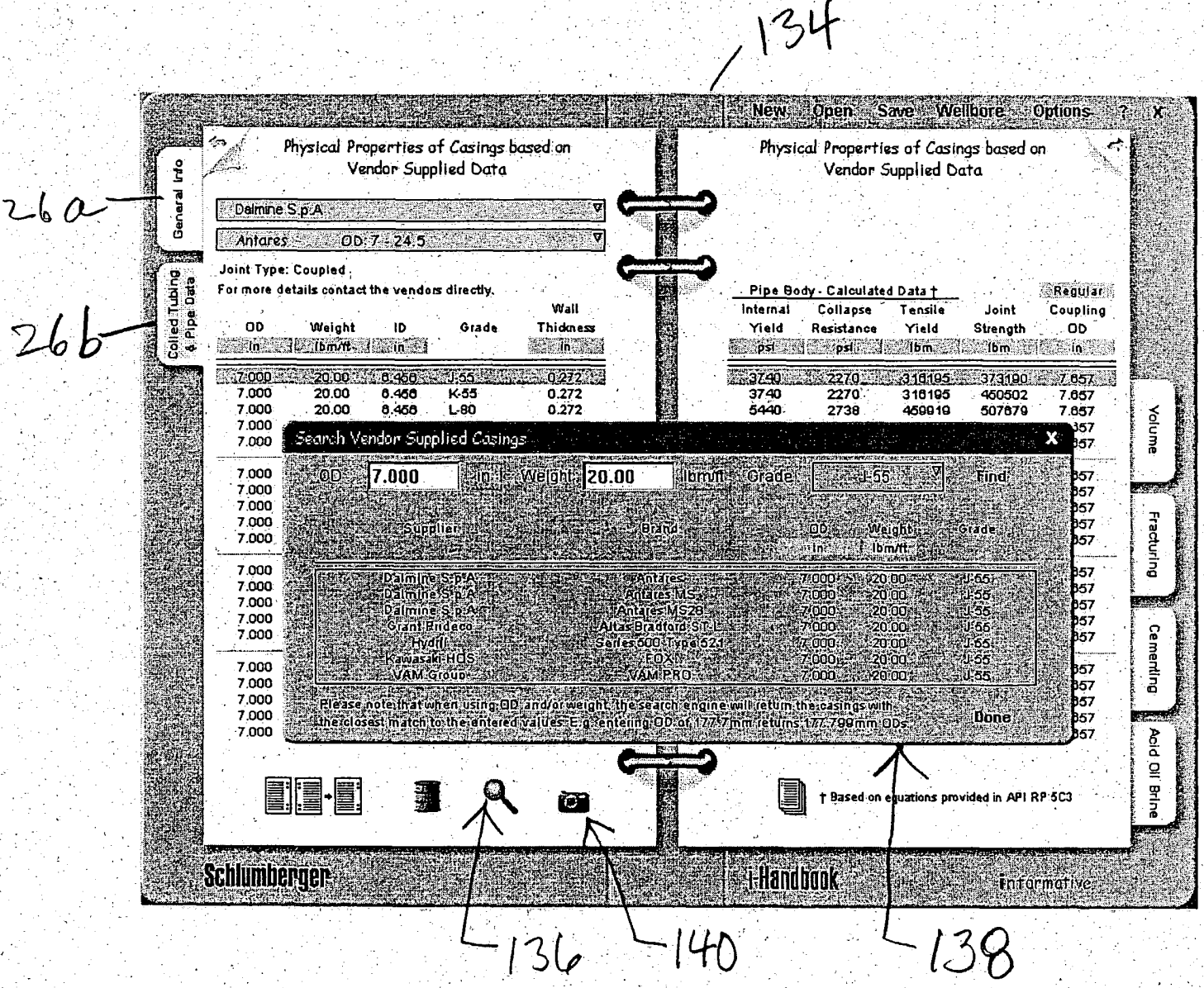

FIG 6 Displaying Tubular Data based on supplier and ability to search through the database.

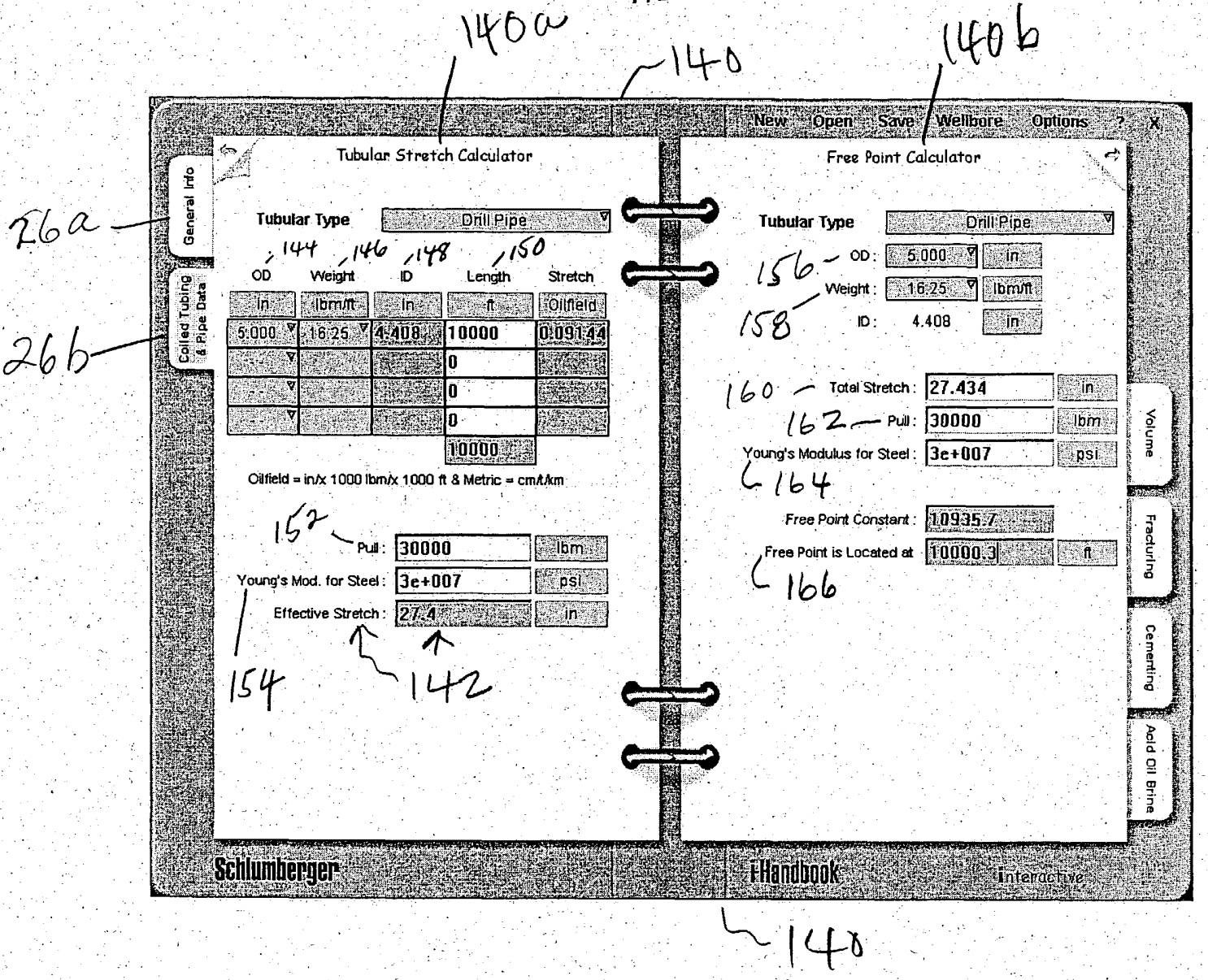

FIG 7 Calculation of Tubular stretch and free point.

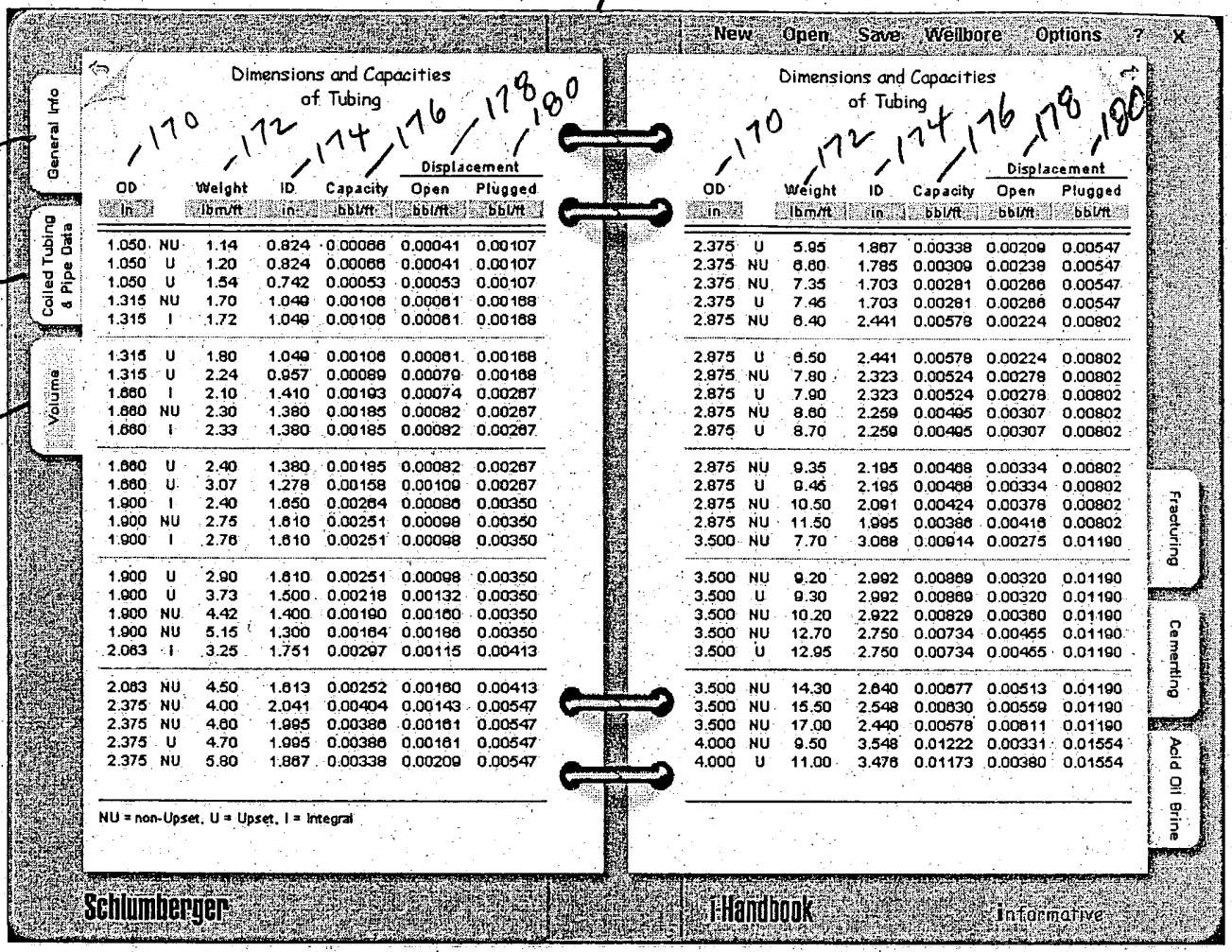

FIG 8 Tubular Capacities and Displacement Volumes

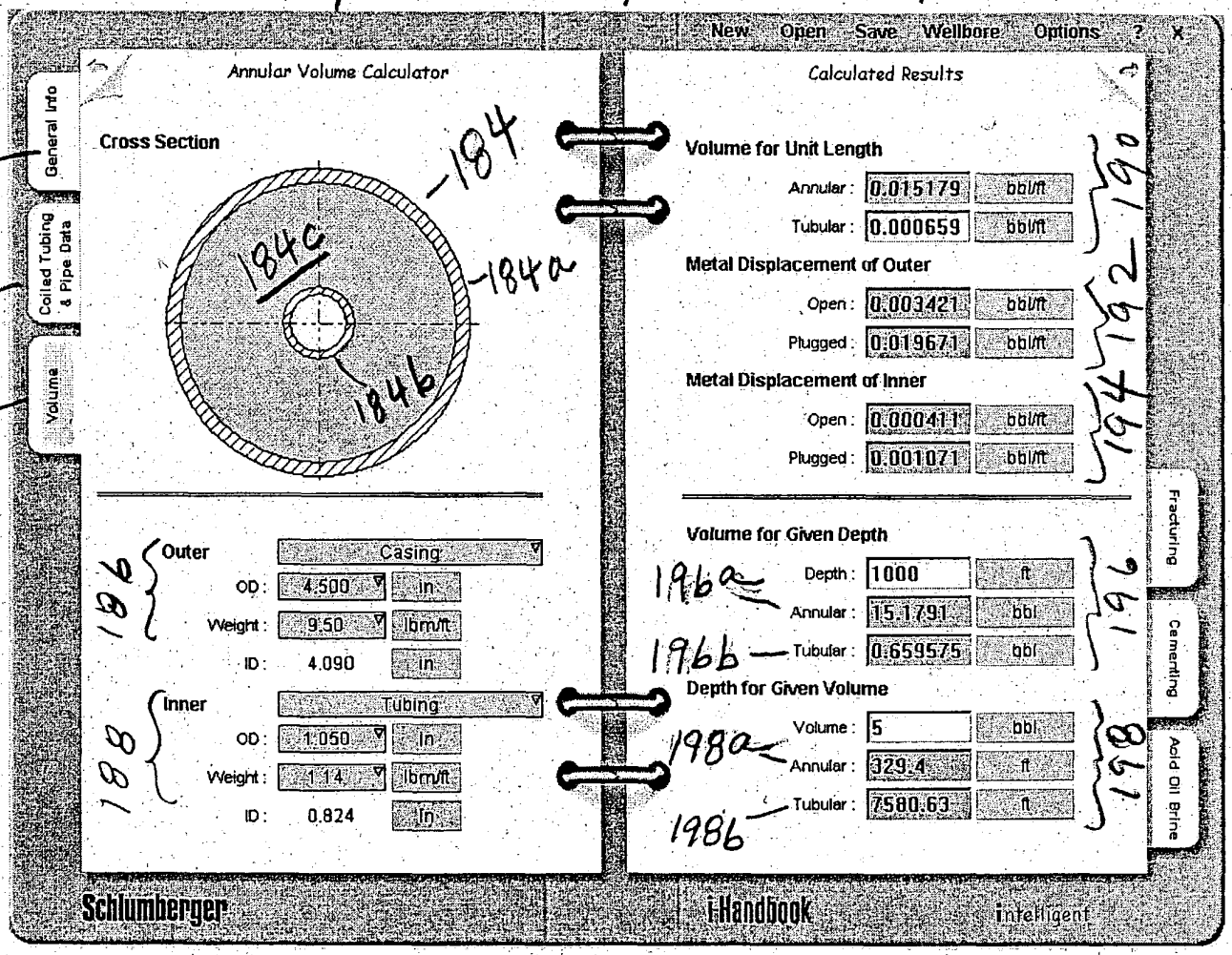

FIG 9 Annulus Volume Calculations

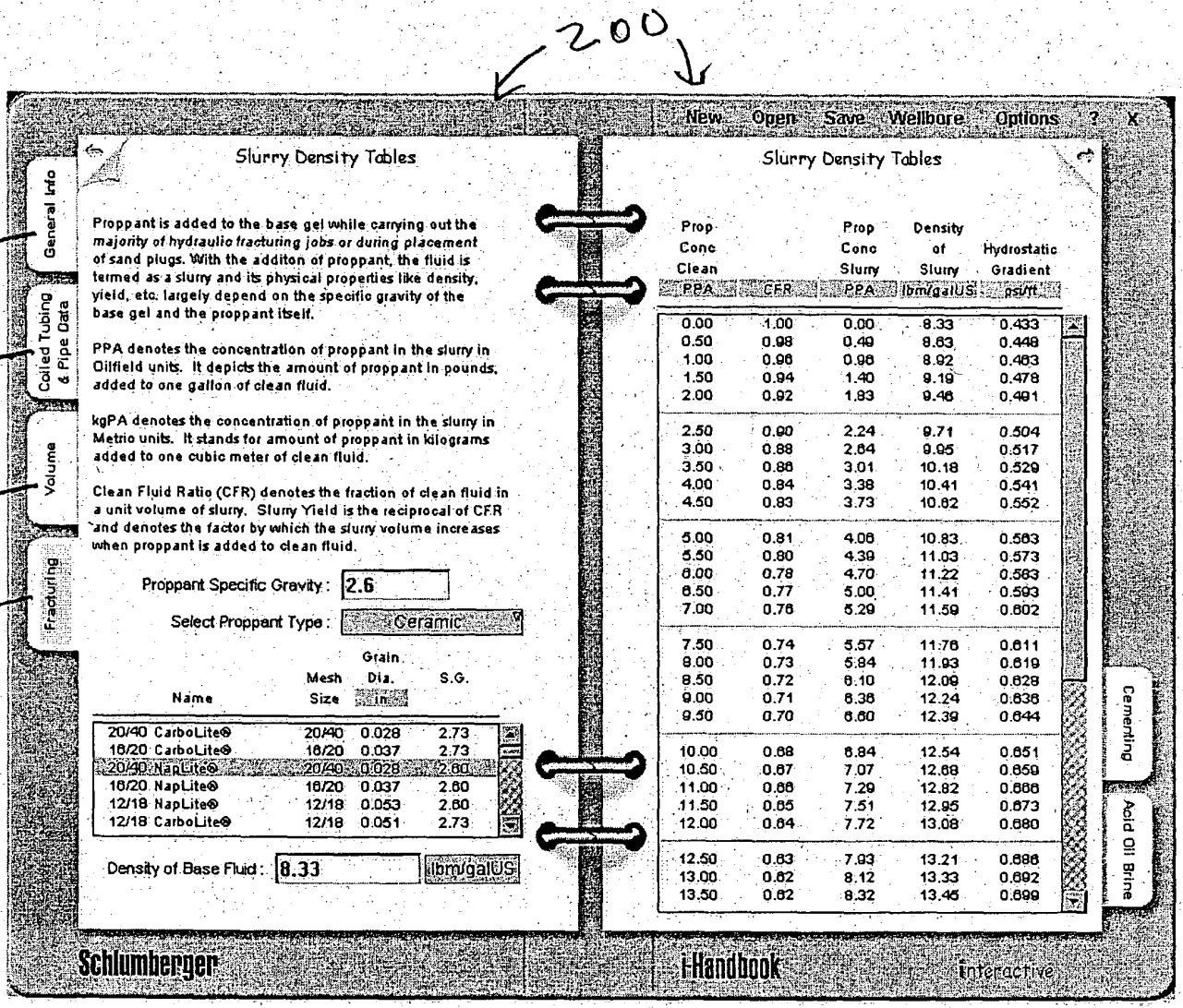

FIG 10 Slurry Density Calculations

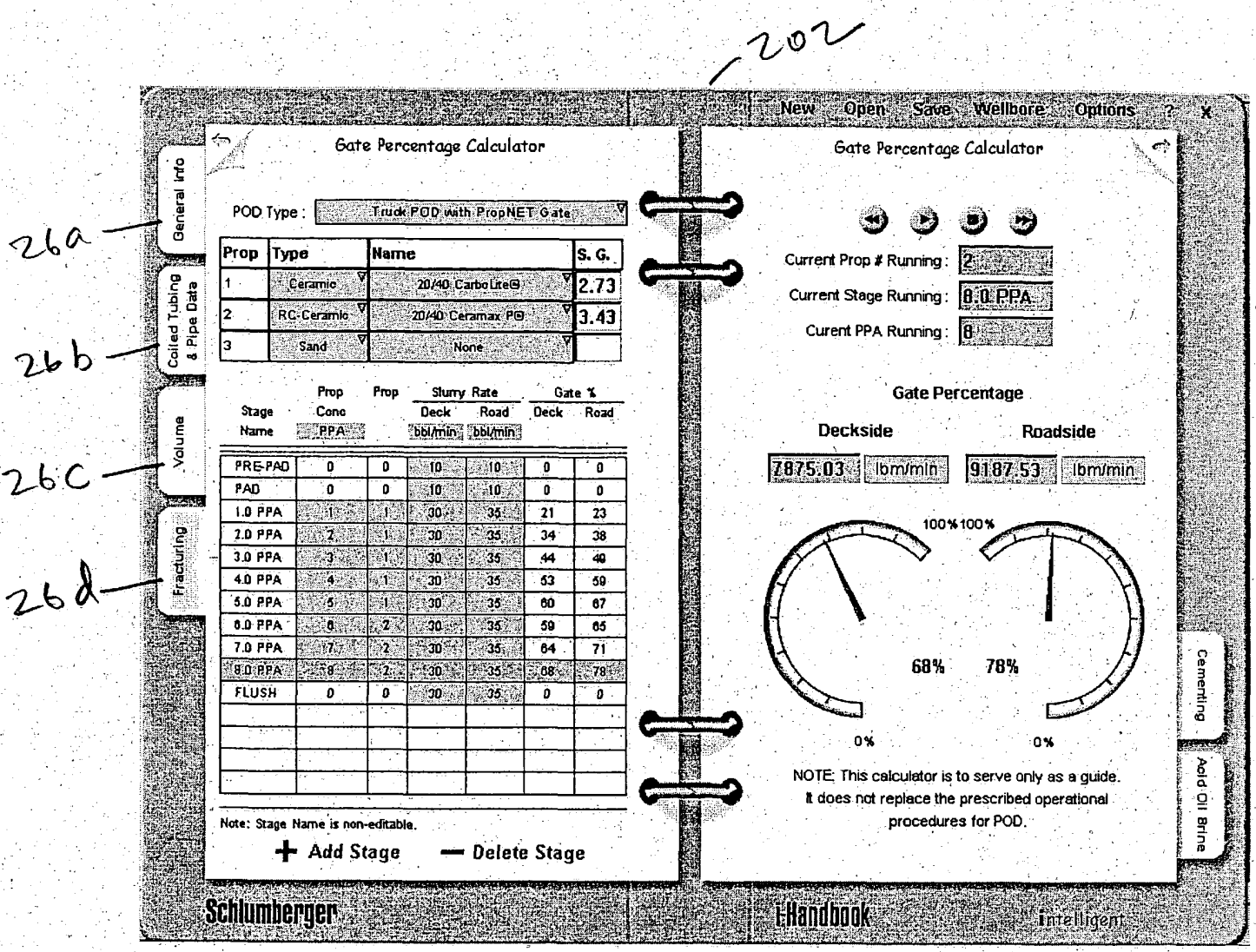

FIG 11 Generating Gate% Charts for a given pump schedule

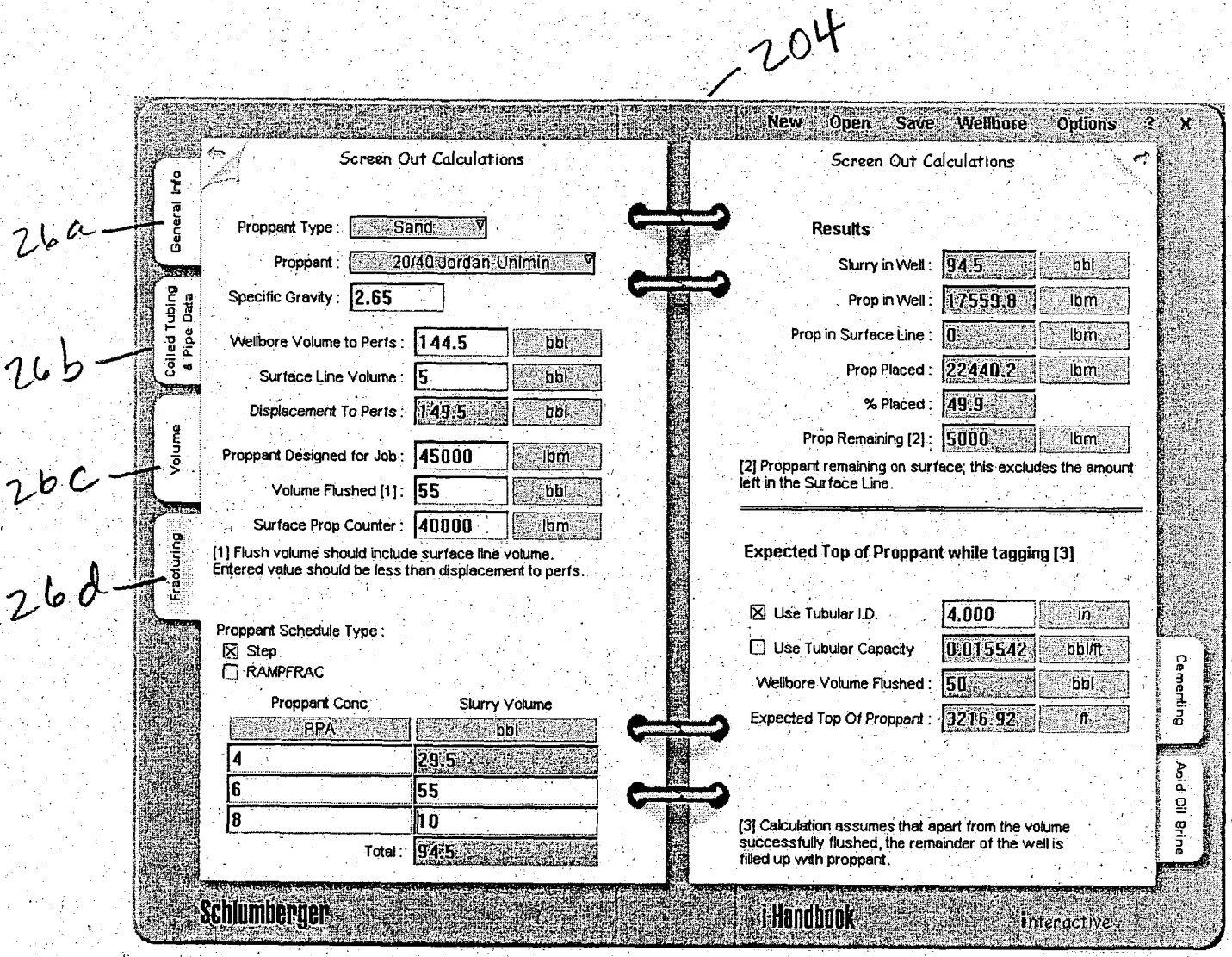

FIG 12 Screen out calculations

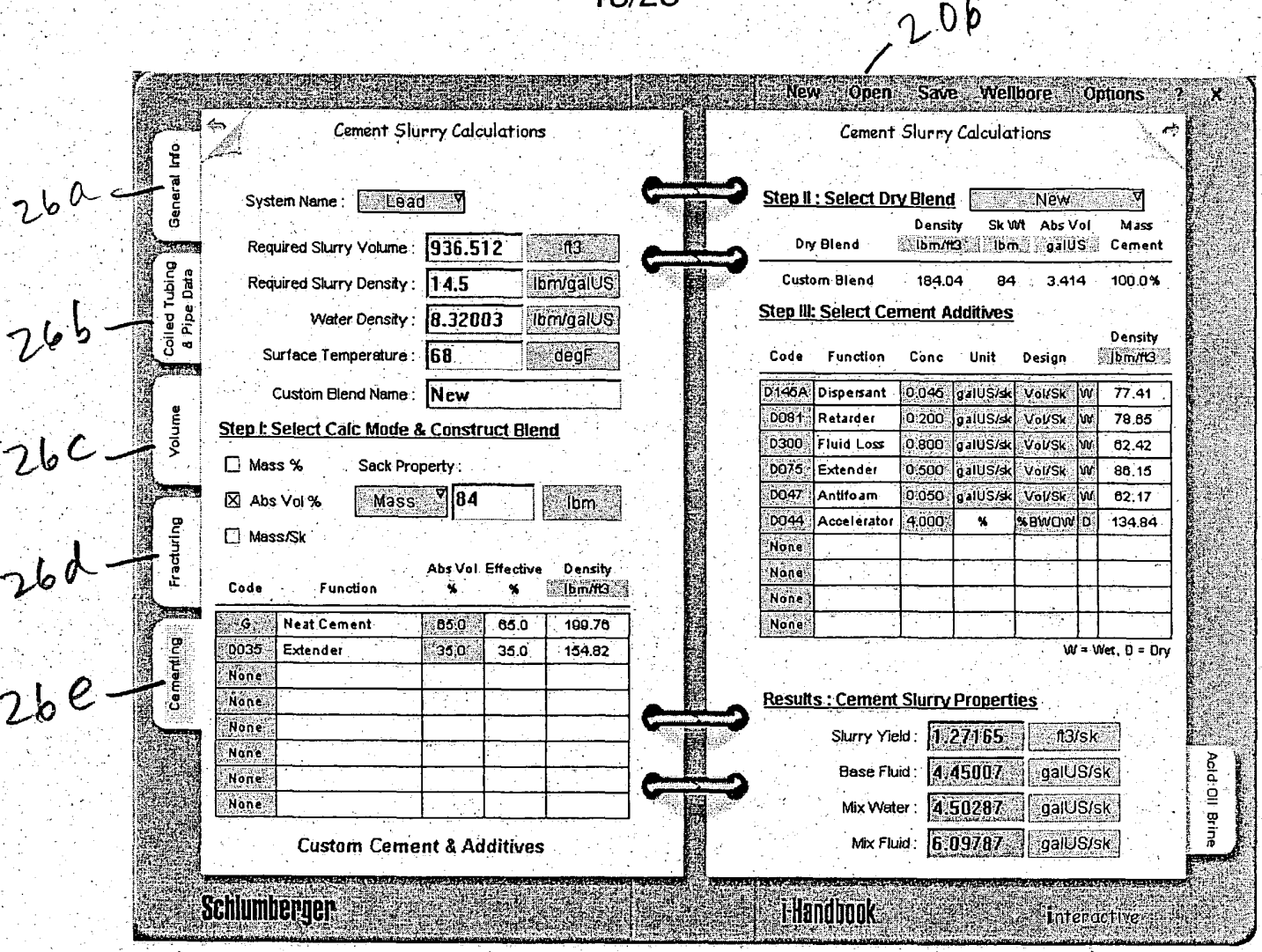

FIG 13 Cement Slurry Calculations showing the property of blended cement

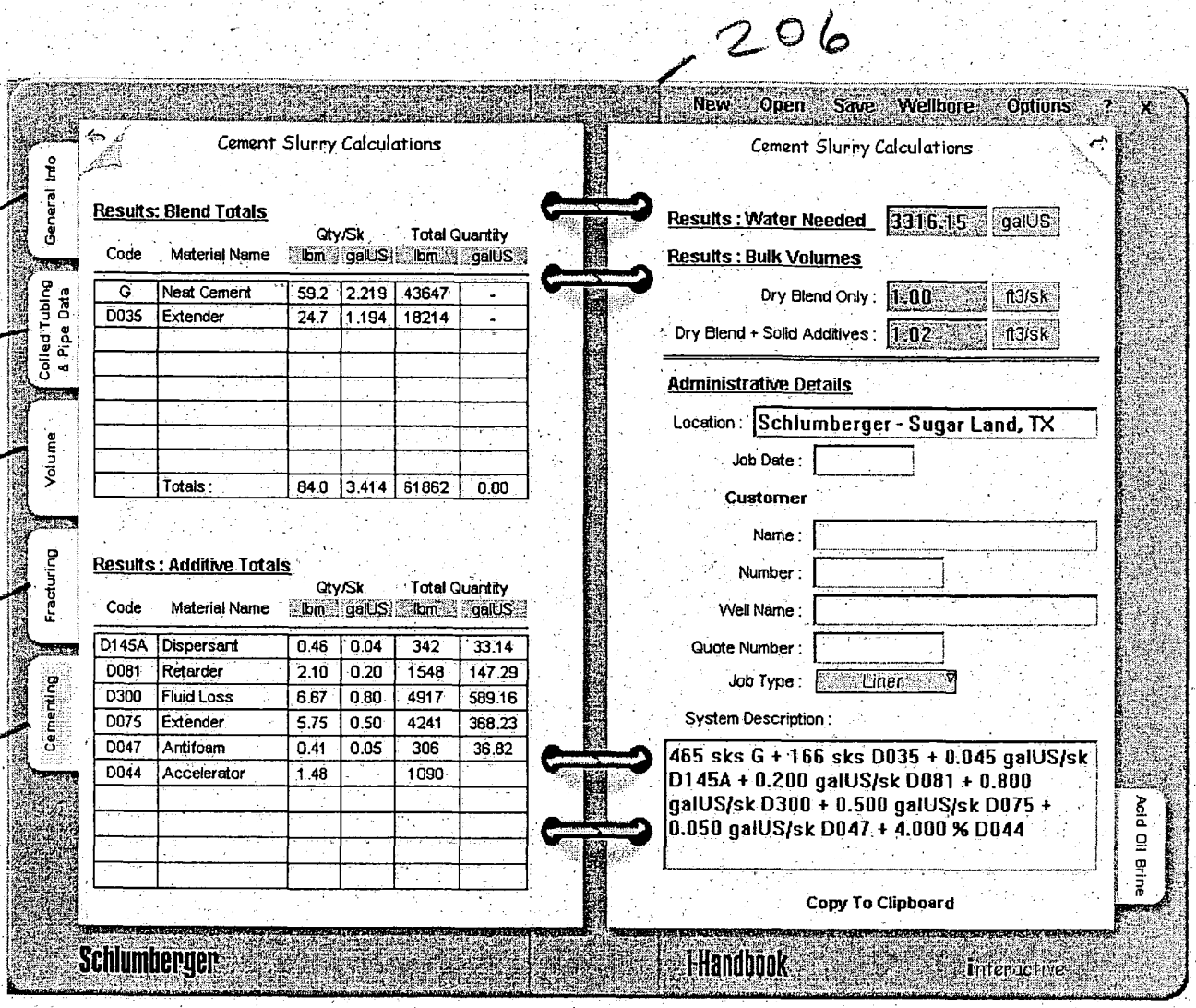

FIG 14 Bulk Plant loading guide is generated based on the user inputs

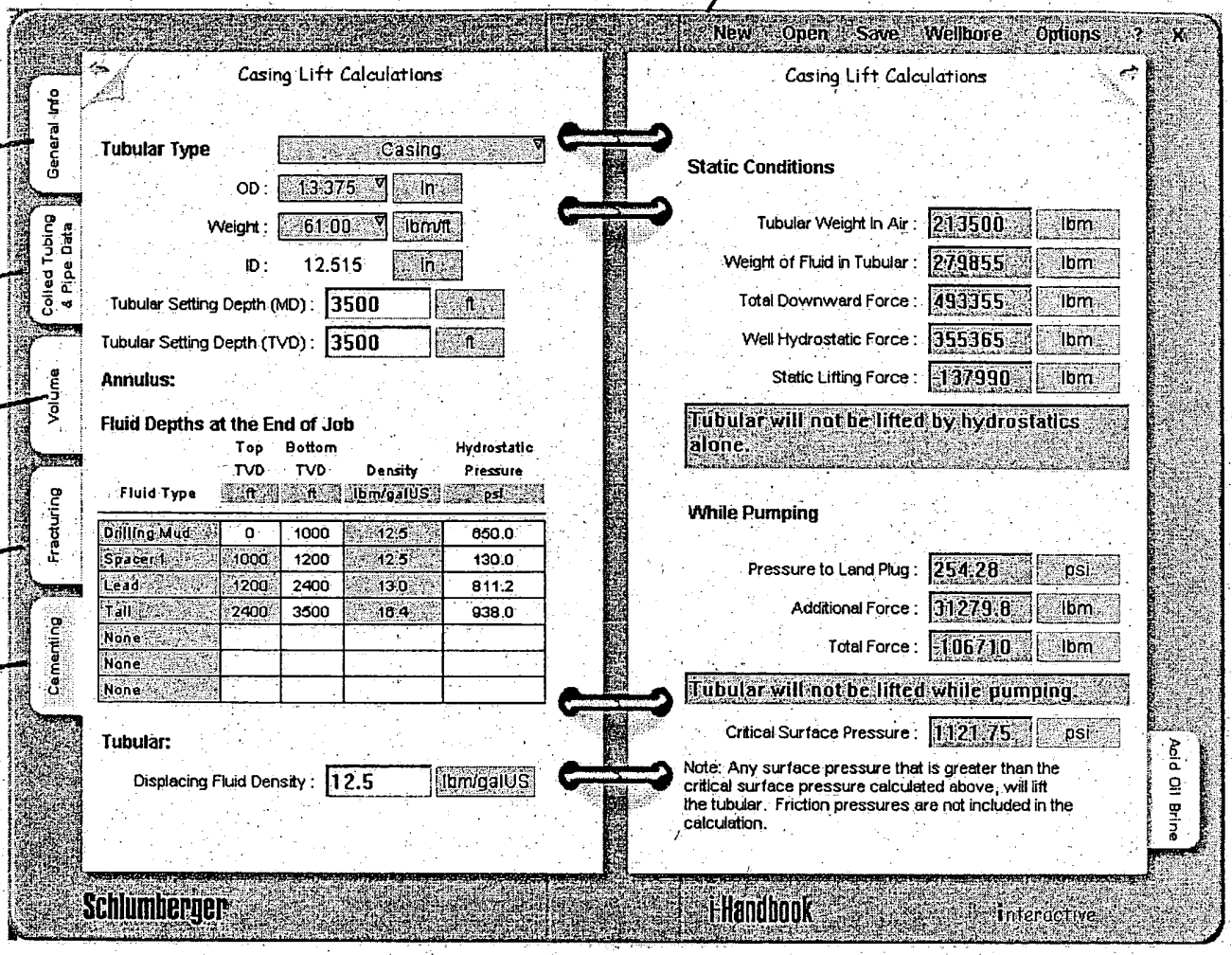

FIG 15 Casing Lift calculations

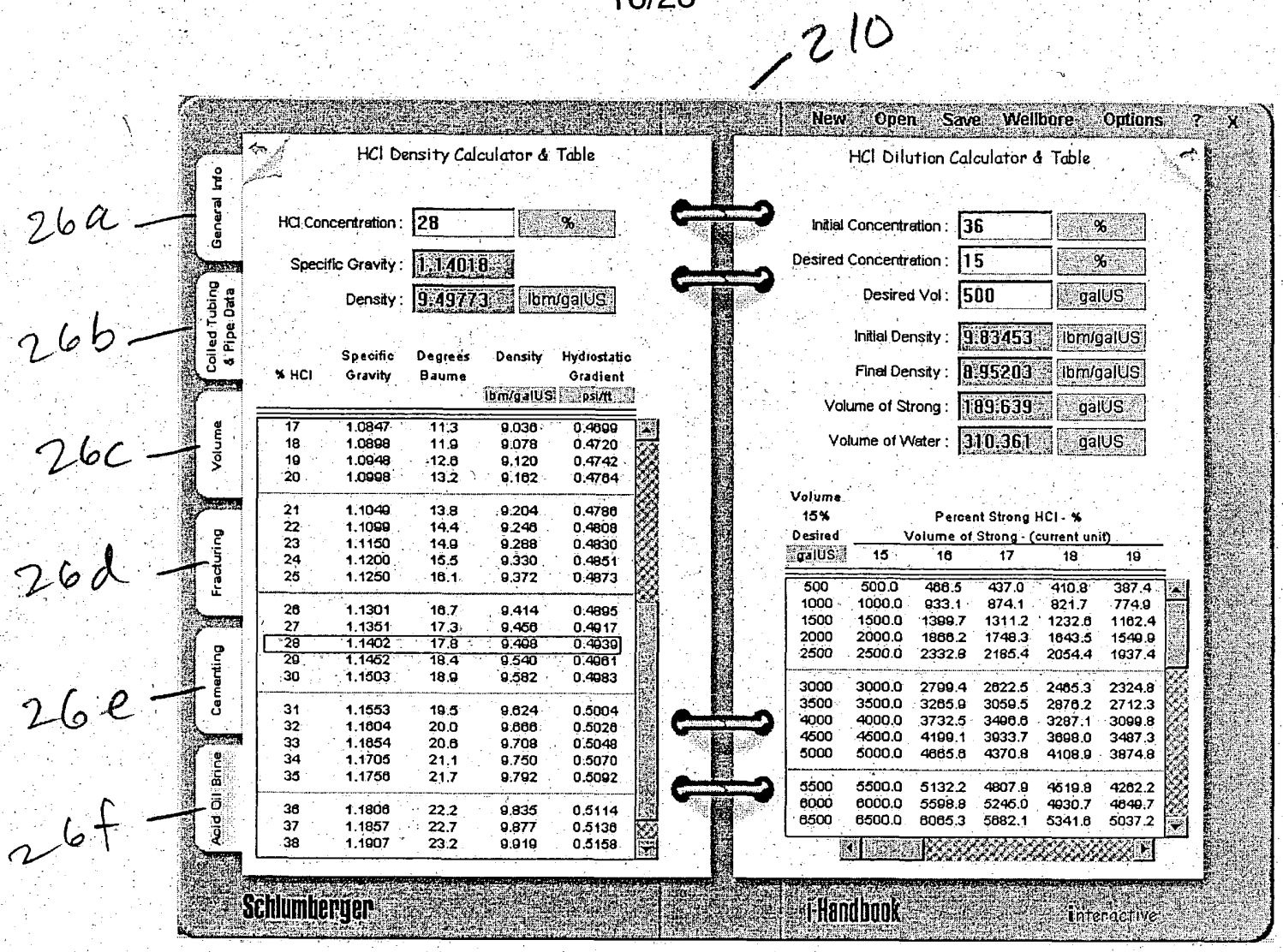

FIG 16 Calculations showing density and dilution for Hydrochloric acid

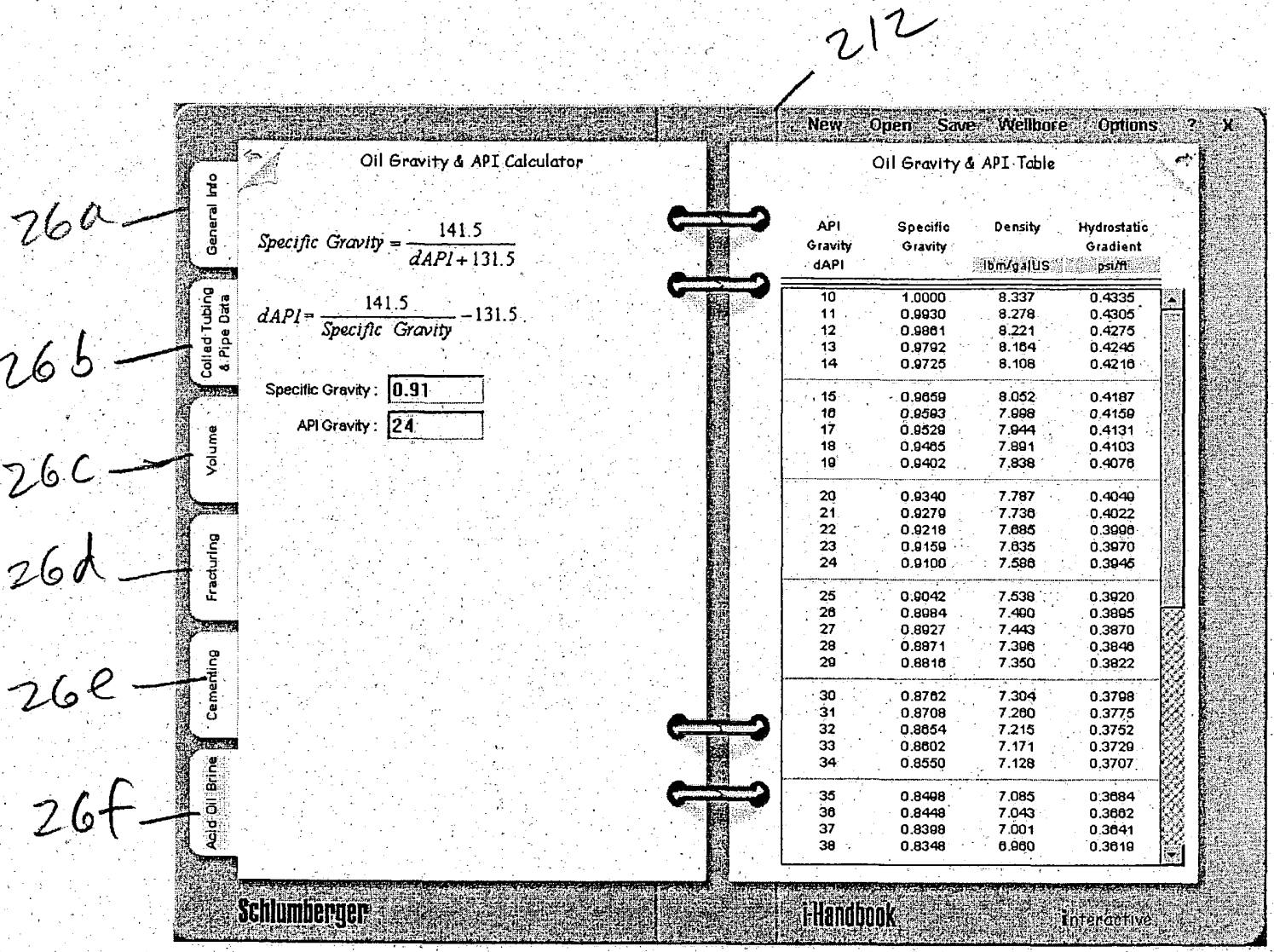

FIG 17 Computing API gravity from Specific gravity of oil and vice versa

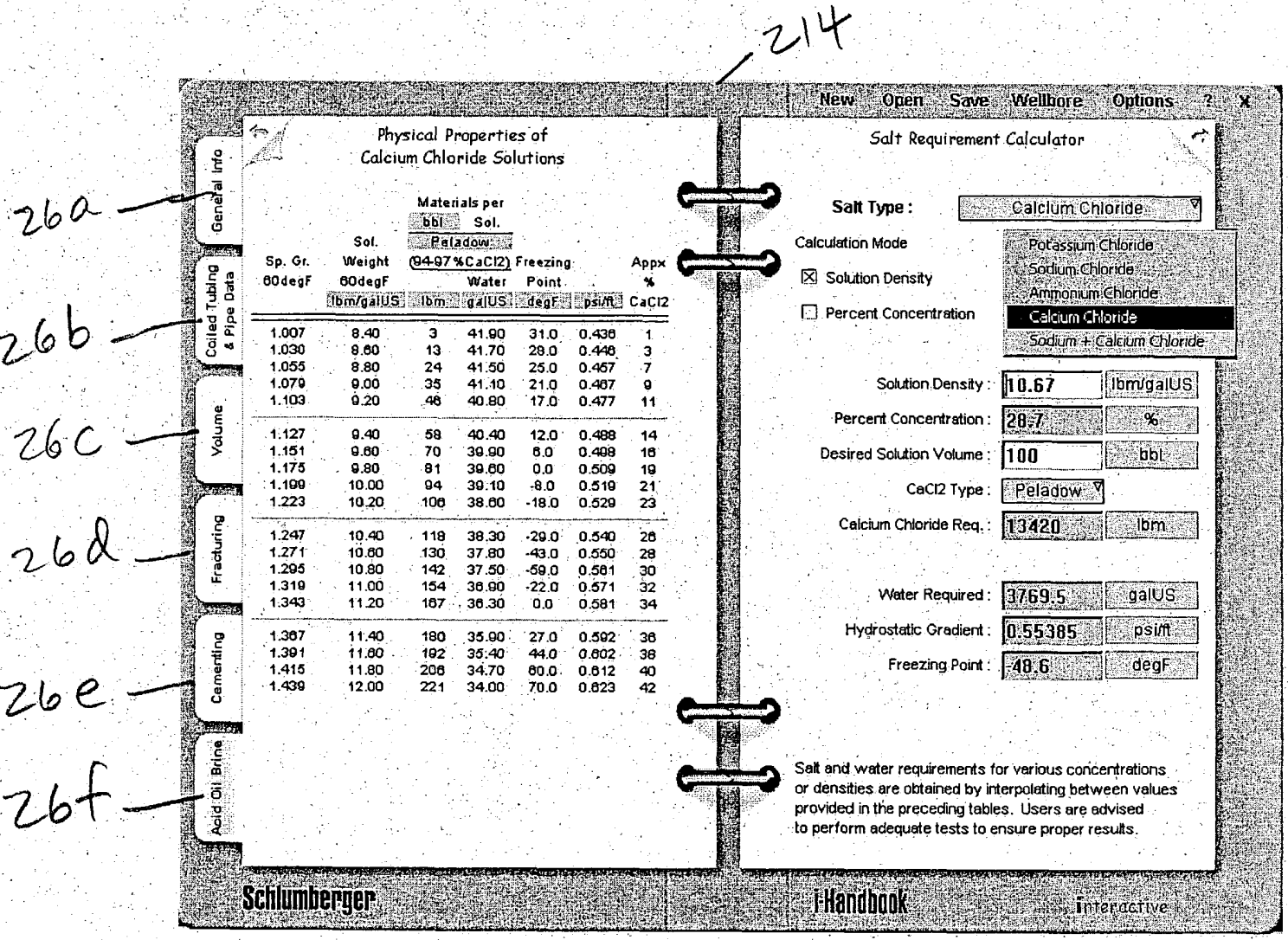

FIG 18 Salt interpolating table

216

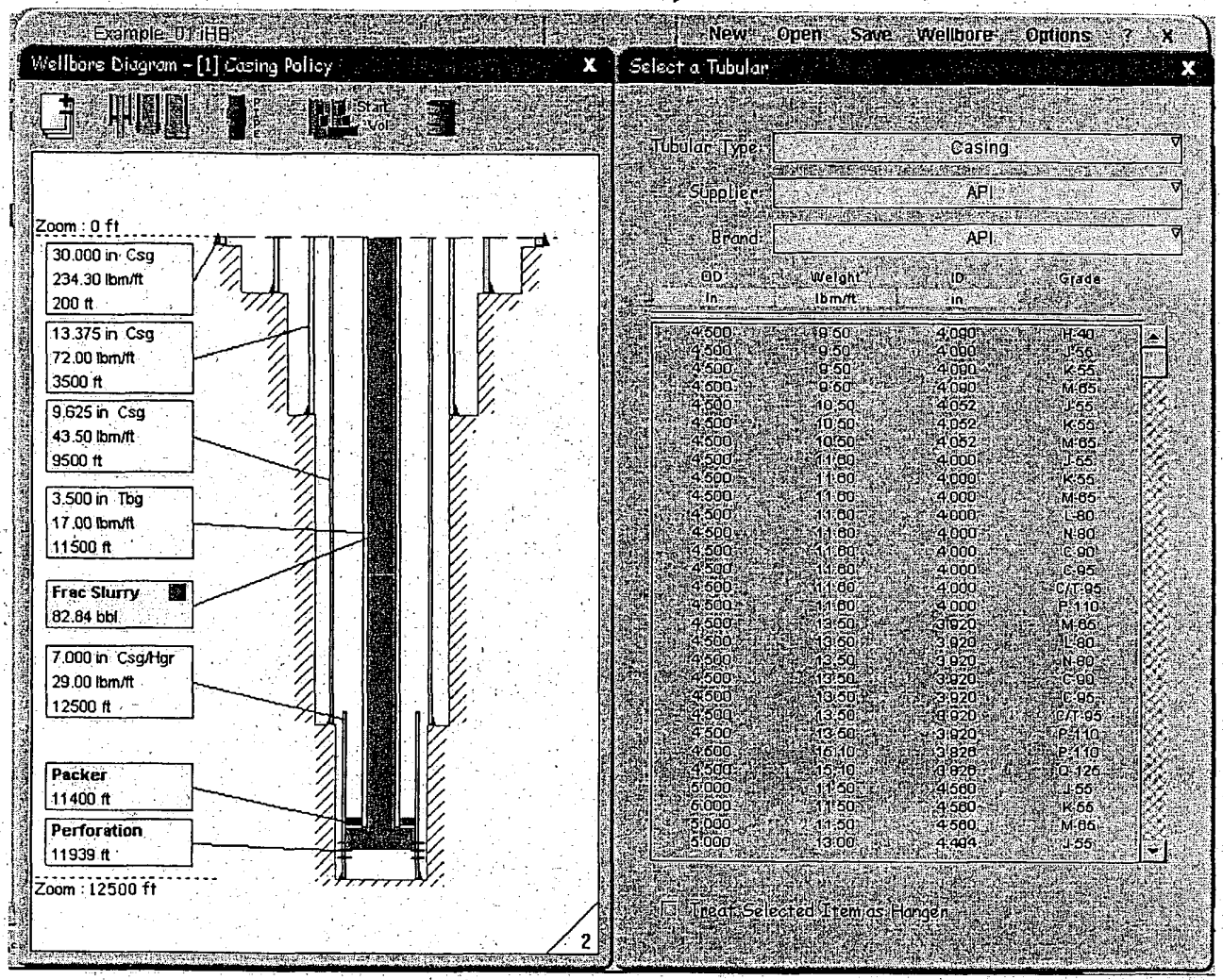

FIG 19 Wellbore Diagram feature

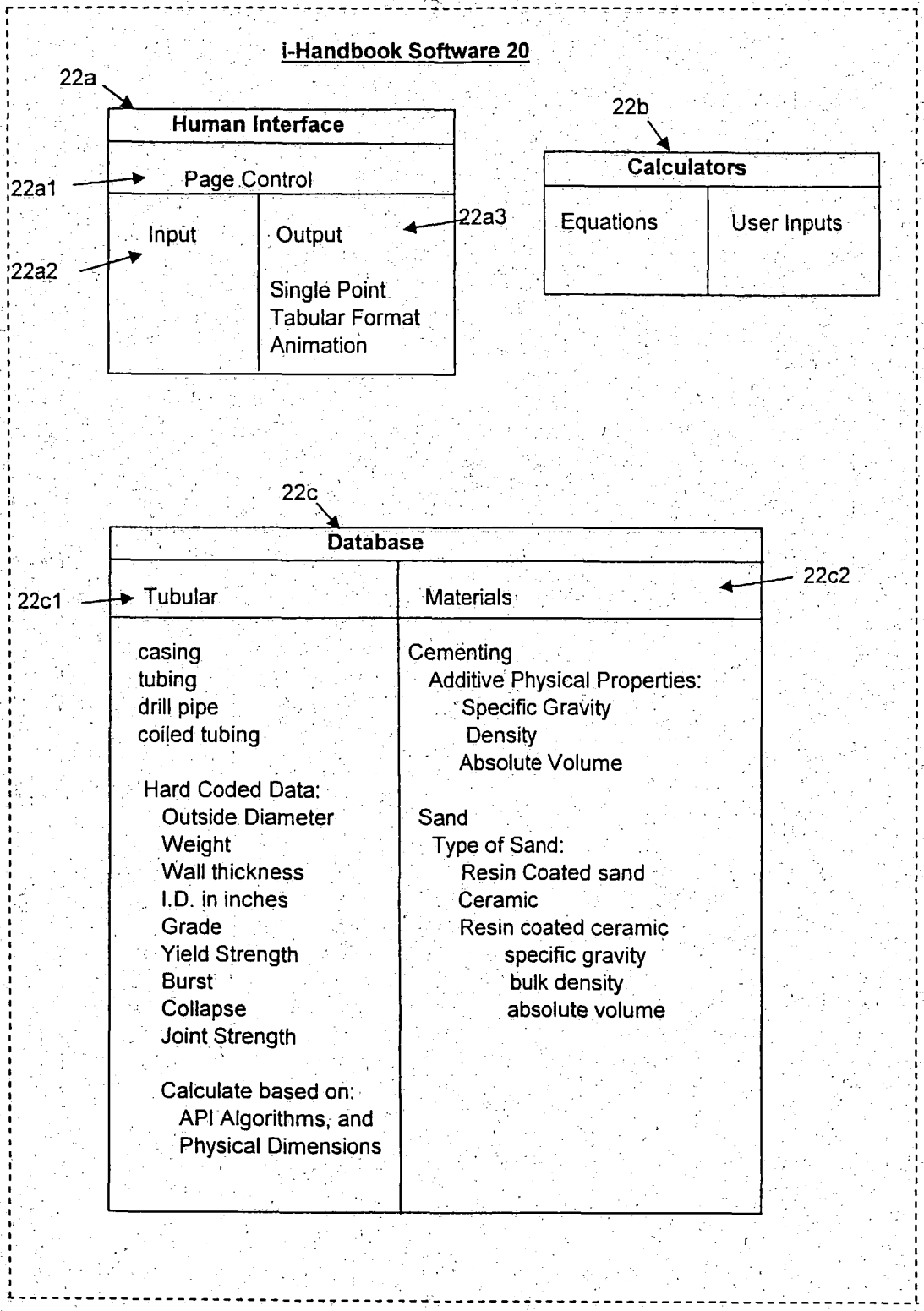
i-Handbook Software 20
22a
Human Interface
22a1
Page Control
22a2
Input
Output
22a3
Single Point
Tabular Format
Animation
22b
Calculators
Equations
User Inputs
22c
Database
22c1
Tubular
Materials
22c2
casing
tubing
drill pipe
coiled tubing
Hard Coded Data:
Outside Diameter
Weight
Wall thickness
I.D. in inches
Grade
Yield Strength
Burst
Collapse
Joint Strength
Calculate based on:
API Algorithms, and
Physical Dimensions
Cementing
Additive Physical Properties:
Specific Gravity
Density
Absolute Volume
Sand
Type of Sand:
Resin Coated sand
Ceramic
Resin coated ceramic
specific gravity
bulk density
absolute volume

FIG 20

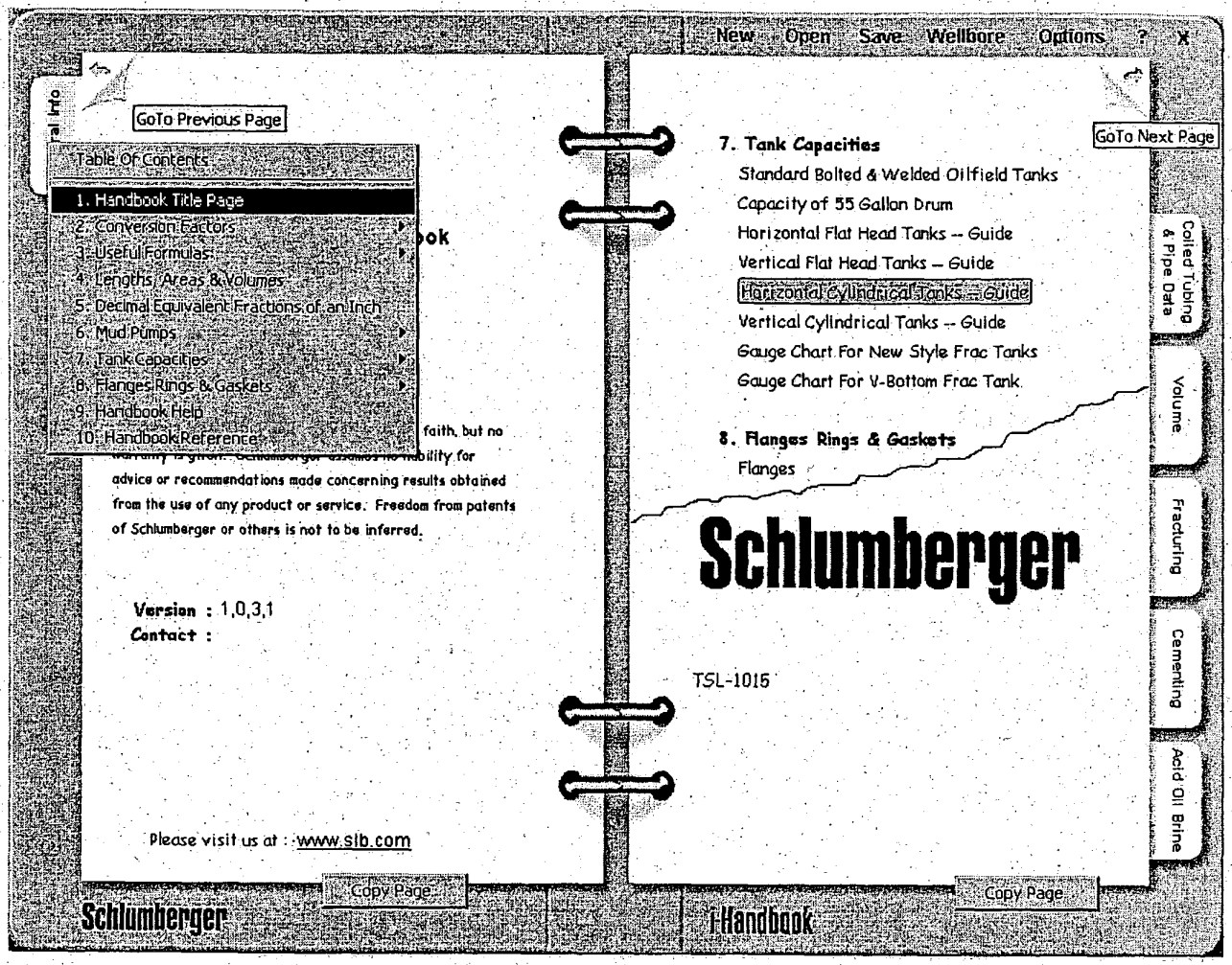

FIG 21 Various features of i-Handbook that pertain to "page control" module.

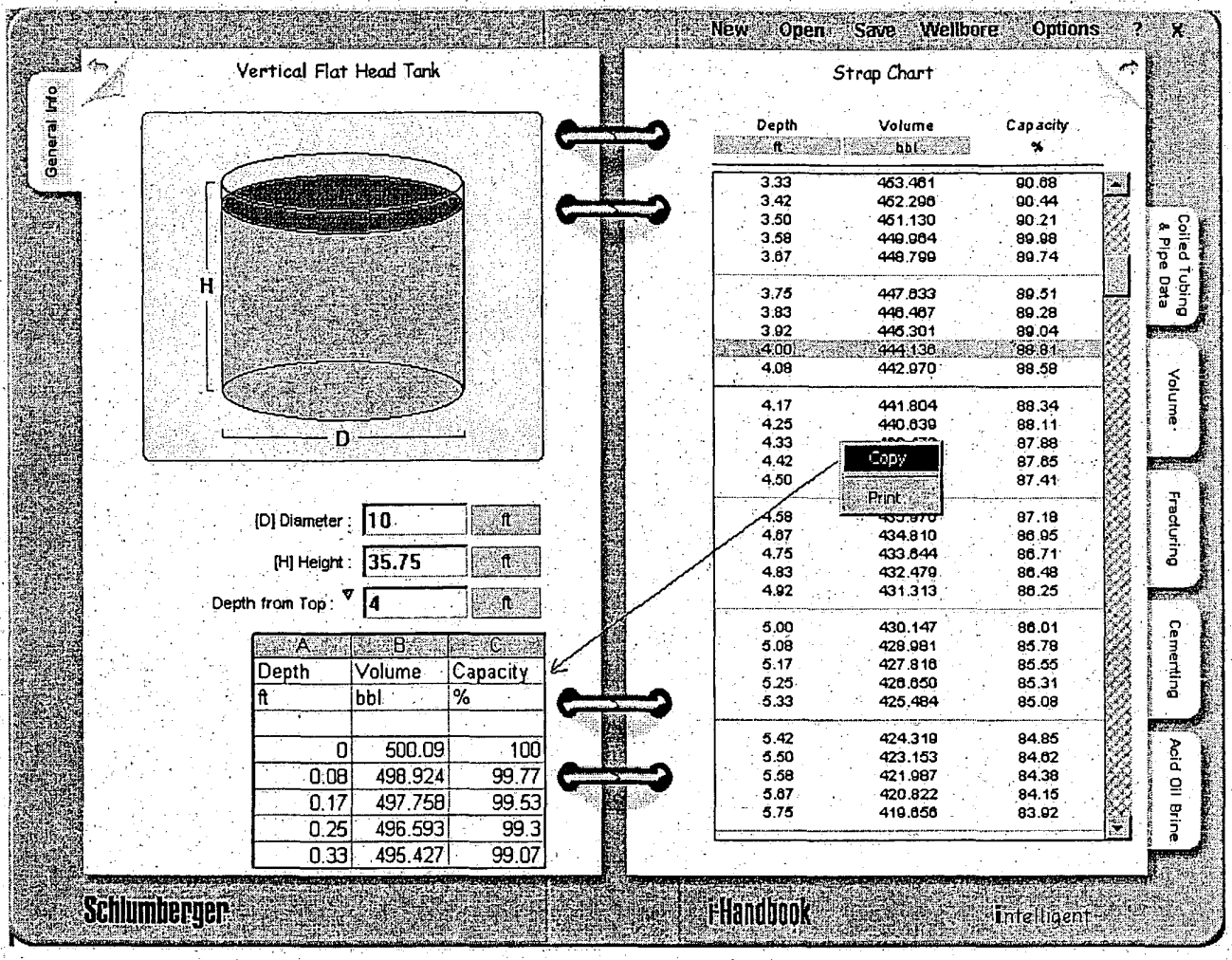

FIG 22 Table Control feature allows proper display of output results and also ability to copy the data and paste it in any cell-based software such that the value in individual cells remains editable.

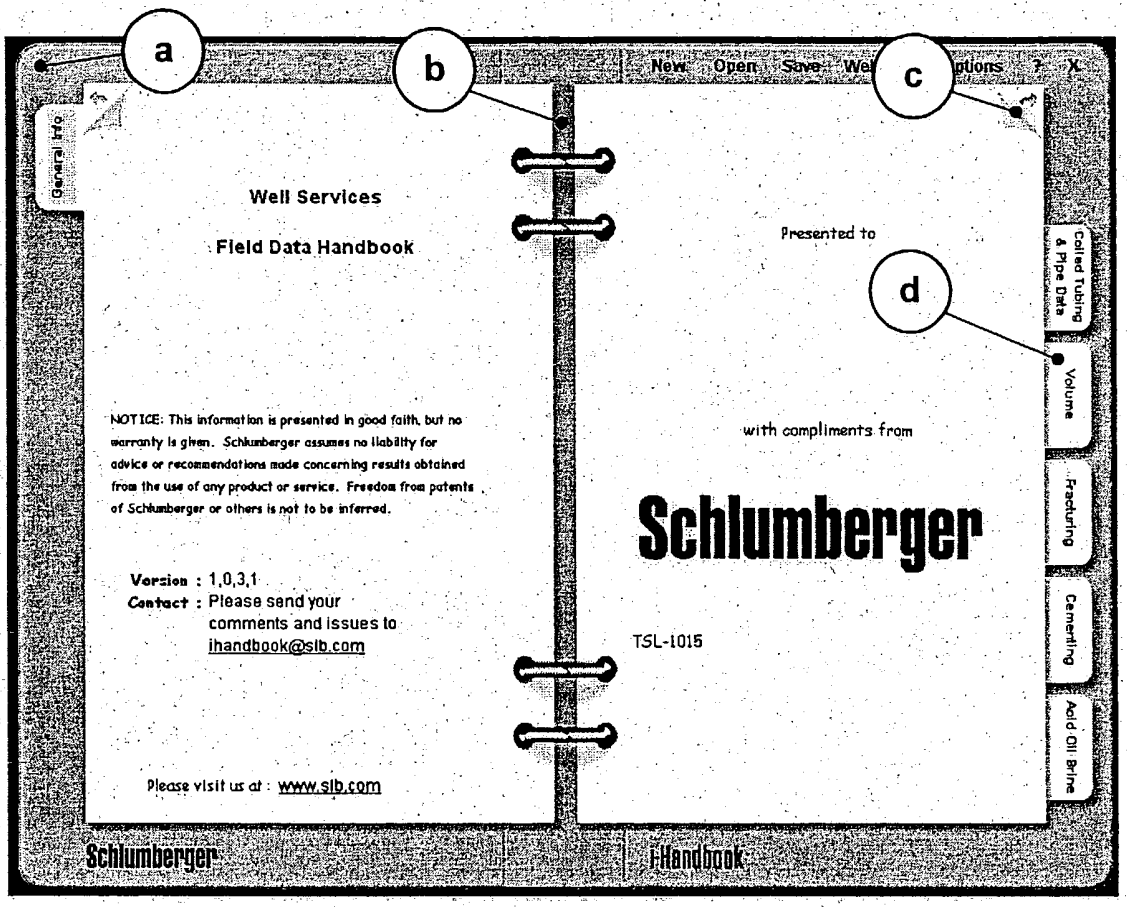

FIG 23 . i-Handbook Application on Windows Desktop.

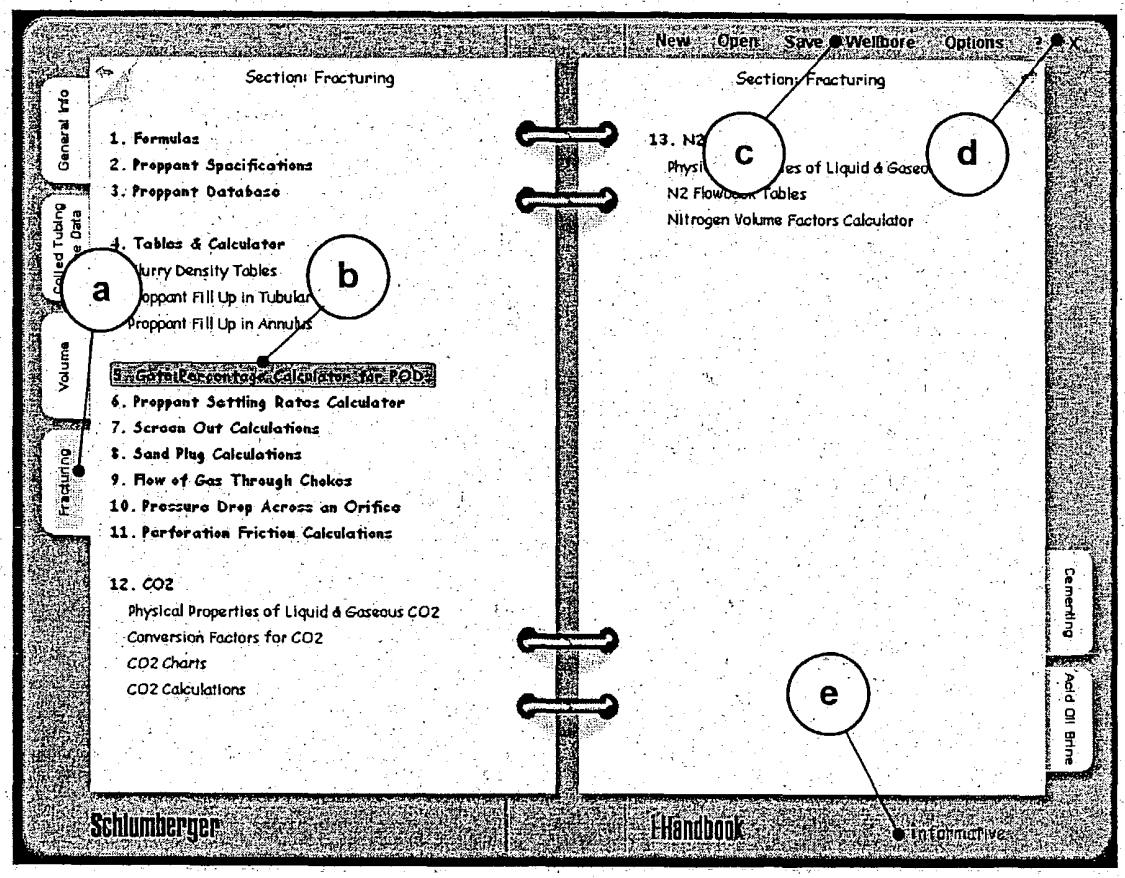

FIG 24 Extended functionality over physical Field Data Handbook

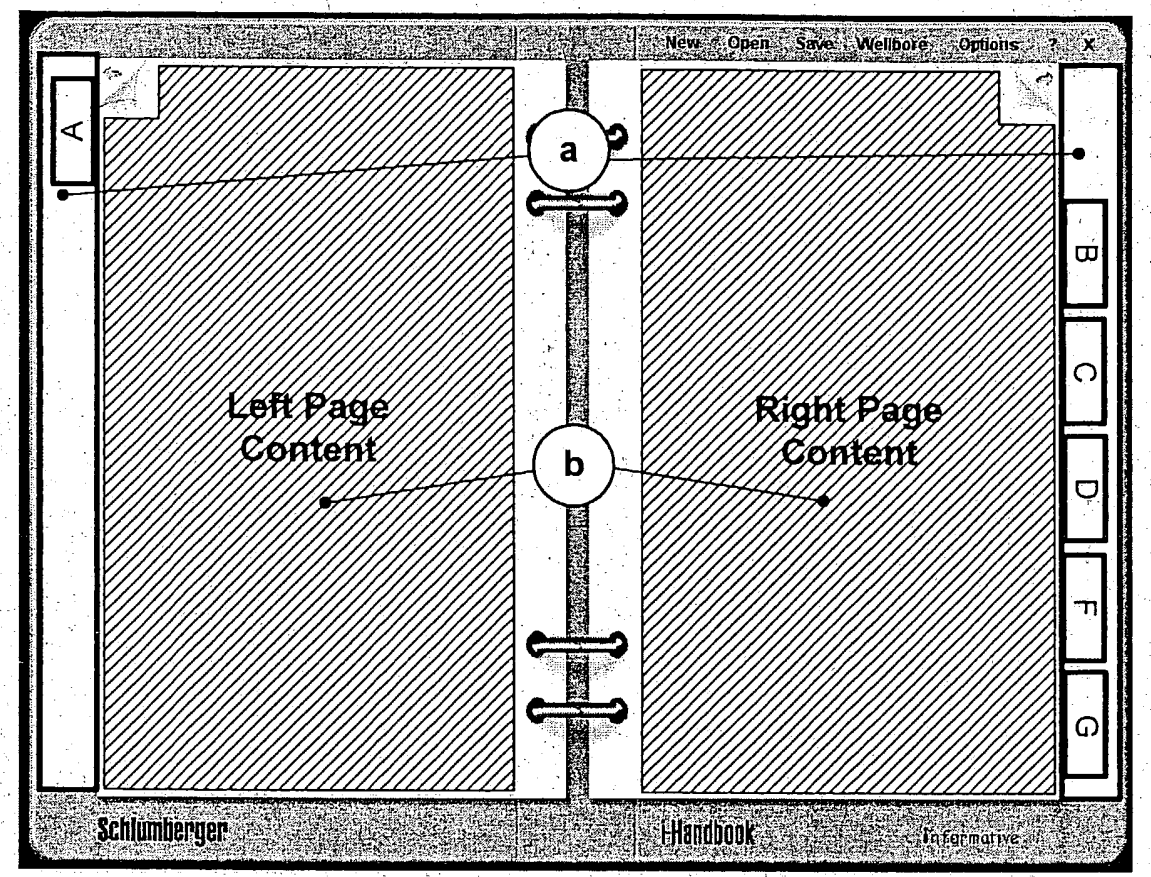

FIG 25 Primary areas of i-Handbook

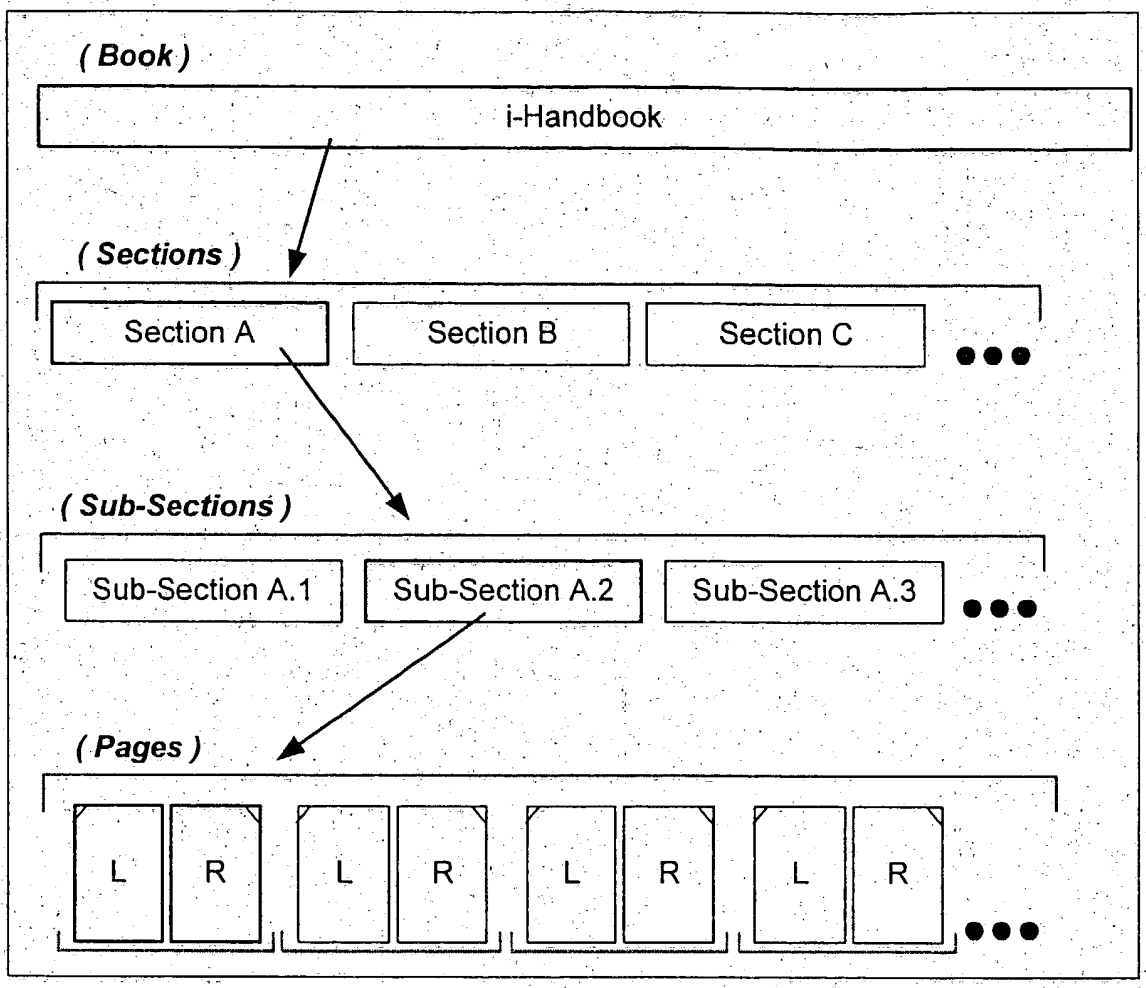

FIG 26 Layers in i-Handbook

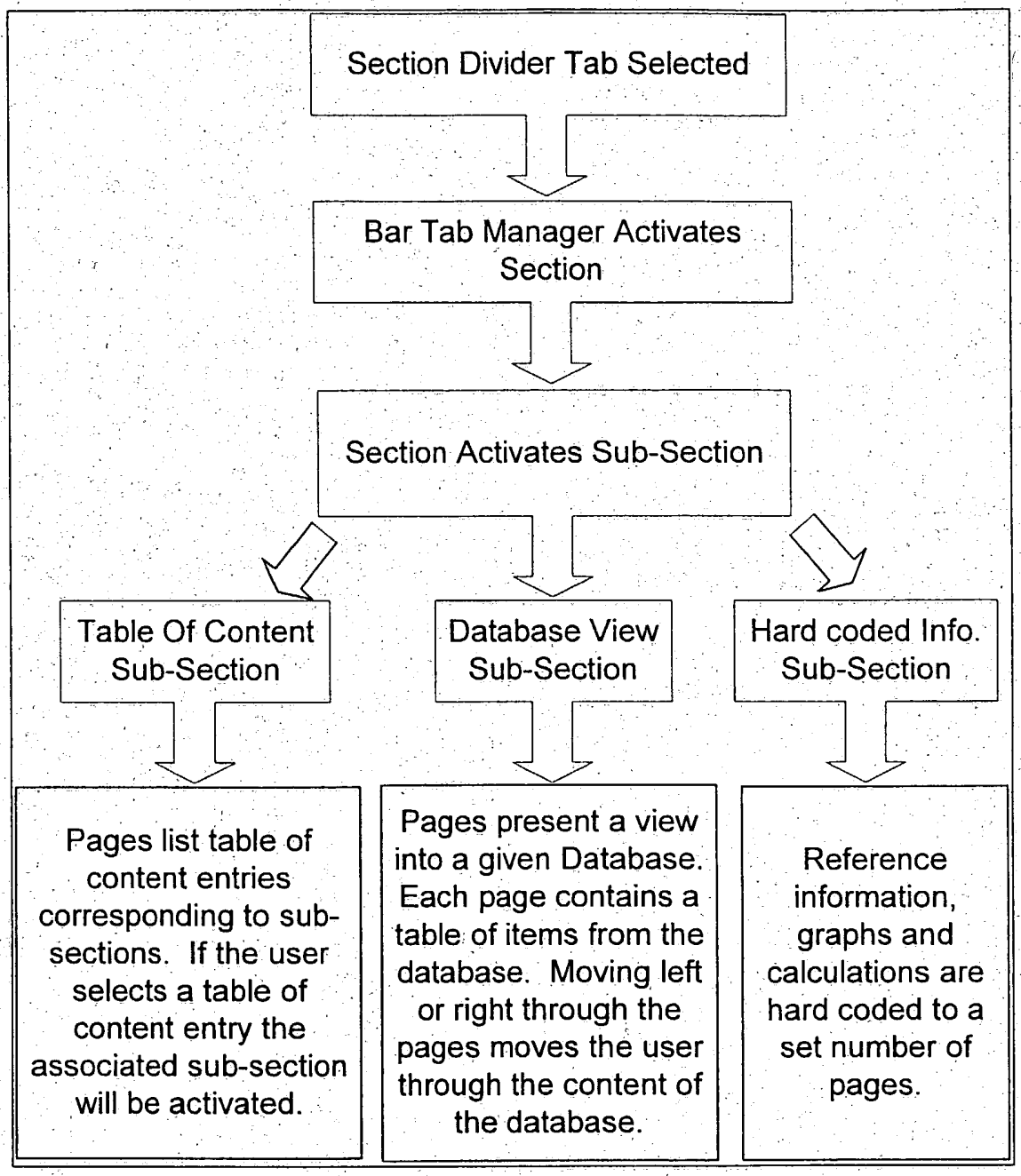

FIG 27 Functional Flow Diagram

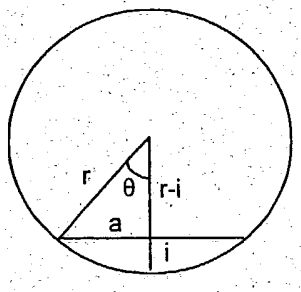
r
θ
r-i
a
i

FIG 28

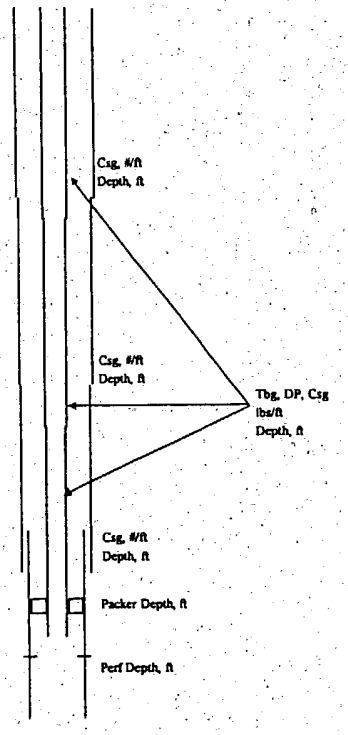
Csg, #/ft
Depth, ft
Csg, #/ft
Depth, ft
Tbg, DP, Csg
lbs/ft
Depth, ft
Csg, #/ft
Depth, ft
Packer Depth, ft
Perf Depth, ft

FIG 29